

FIGURE 1

```
gagcccaaatt cttgtgacaa aactcacaca tgcccaccgt gccagcacc tgaactcctg 60
gggggaccgt cagtcttcct ctcccccca aaacccaagg acacctcat gatctcccgg 120
acccctgagg tcacatgcgt ggtggtggac gtgagccacg aagacctga ggtcaagttc 180
aactggtacg tggacggcgt ggaggtgcat aatgttaaga caaagccgcg ggaggagcag 240
tacaacagca cgtaccgtgt ggtcagcgtc ctacccgtcc tgcaccagaa ctggatgaat 300
ggaaaggagt acaagtgcaa ggtctccaac aaagccctcc cagcccccat cgagaaaacc 360
atctccaaag ccaaagtgca gccccgagaa ccacaggtgt acacctgcc cccatcccgg 420
gatgagctga ccaagaacca ggtcagcctg acctgcctgg tcaaaggctt ctatcccagc 480
gacatcgccg tggagtggga gagcaatggg cagccggaga acaactacaa gaccacgcct 540
cccgtgctgg actccgtcgg ctctctcttc ctctacagca agctcaccgt ggacaagagc 600
aggtggcagc aggggaacgt cttctcatgc tccgtgatgc atgaggctct gcacaaccac 660
taccagcaga ggagcctctc cctgtctccg ggtaaa 696
```

gagcccaaatt cttgtgacaa aactcacaca tgcccaccgt gccagcacc tgaactcctg 60

FIGURE 2

Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu	Ala	Pro	Ser	Ser	Lys
Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr
Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser
Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser
Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr	Gln	Thr
Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys
Lys	Val	Glu	Pro	Lys	Ser	Cys	Asp	Lys	Thr	His	Thr	Cys	Pro	Pro	Cys
Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro
Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys
Val	Val	Val	Asp	Val	Ser	His	Glu	Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp
Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Val	Lys	Thr	Lys	Pro	Arg	Glu
Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	Val	Leu
His	Gln	Asn	Trp	Met	Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn
Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala	Lys	Val
Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro	Pro	Ser	Arg	Asp	Glu
Leu	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr
Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn
Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	Leu	Asp	Ser	Val	Gly	Ser	Phe	Phe
Leu	Tyr	Ser	Lys	Leu	Thr	Val	Asp	Lys	Ser	Arg	Trp	Gln	Gln	Gly	Asn
Val	Phe	Ser	Cys	Ser	Val	Met	His	Glu	Ala	Leu	His	Asn	His	Tyr	Gln
Gln	Arg	Ser	Leu	Ser	Leu	Ser	Pro	Gly	Lys						

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FIGURE 3

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
Asp Gly Val Glu Val His Asn Val Lys Thr Lys Pro Arg Glu Glu Gln
Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
Asn Trp Met Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Val Gln Pro
Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr
Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
Lys Thr Thr Pro Pro Val Leu Asp Ser Val Gly Ser Phe Phe Leu Tyr
Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Gln Gln Arg
Ser Leu Ser Leu Ser Pro Gly Lys

FIGURE 4

tccacacaga	gcccattccgt	cttccccttg	acccgctgct	gcaaaaaacat	tccctccaat	60
gccacctccg	tgactctggg	ctgcctggcc	acgggctact	tcccggagcc	ggtgatggtg	120
acctgggaca	caggctccct	caacgggaca	actatgacct	taccagccac	cacctcacg	180
ctctctggtc	actatgccac	catcagcttg	ctgaccgtct	cggtgctgtg	ggccaagcag	240
atgttcacct	gccgtgtggc	acacactcca	togtccacag	actgggtcga	caacaaaacc	300
ttcagcgtct	gctccagggg	cttcaccccg	cccaccgtga	agatcttaca	gtcgtcctgc	360
gacggcggcg	ggcacttccc	cccagaccatc	cagctcctgt	gcctcgtctc	tgggtacacc	420
ccagggacta	tcaacatcac	ctggctggag	gacgggcagg	tcatggacgt	ggacttgctc	480
accgcctcta	ccacgcagga	gggtgagctg	gcctccacac	aaagcgagct	cacctcagc	540
cagaagcact	ggctgtcaga	ccgcacctac	acctgccagg	tcacctatca	aggtcacacc	600
tttgaggaca	gcaccaagaa	gtgtgcagat	tccaaccgga	gaggggtgag	cgcctacct	660
agccggccca	gcccgttcga	cctgttcac	cgcaagtgc	ccacgatcac	ctgtctggtg	720
gtggacctgg	caccagcaa	ggggaccgtg	aacctgacct	ggtcccgggc	cagtgggaag	780
cctgtgaacc	actccaccag	aaaggaggag	aagcagcgca	atggcacgtt	aaccgtcacg	840
tccaccctgc	cgtgggcac	ccgagactgg	atcgaggggg	agacctacca	gtgcagggtg	900
acccaccccc	acctgccag	ggccctcatg	cgggtccacga	ccaagaccag	cggcccgcgt	960
gctgccccgg	aagtctatgc	gtttgcgacg	cgggagtggc	cggggagccg	ggacaagcgc	1020
accctcgctt	gcctgatcca	gaacttcatg	cctgaggaca	tctcggtgca	gtggctgcac	1080
aacgaggtgc	agctcccgga	cgcccggcac	agcacgacgc	agccccgcaa	gaccaagggc	1140
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gagttcatct	gccgtgcagt	ccatgaggca	gcgagcccct	cacagaccgt	ccagcgagcg	1260
gtgtctgtaa	atcccggtaa	atgacgtact	cctgcctccc	tccctcccag	ggctccatcc	1320
agctgtgcag	tggggaggac	tggccagacc	ttctgtccac	tgttgcaatg	acccagga	1380
gctaccccc	ataaactgtg	cctgctcaga	gccccagtac	acccattctt	gggagcgggc	1440
agggc						1445

FIGURE 5

Ser	Thr	Gln	Ser	Pro	Ser	Val	Phe	Pro	Leu	Thr	Arg	Cys	Cys	Lys	Asn
Ile	Pro	Ser	Asn	Ala	Thr	Ser	Val	Thr	Leu	Gly	Cys	Leu	Ala	Thr	Gly
Tyr	Phe	Pro	Glu	Pro	Val	Met	Val	Thr	Trp	Asp	Thr	Gly	Ser	Leu	Asn
Gly	Thr	Thr	Met	Thr	Leu	Pro	Ala	Thr	Thr	Leu	Thr	Leu	Ser	Gly	His
Tyr	Ala	Thr	Ile	Ser	Leu	Leu	Thr	Val	Ser	Gly	Ala	Trp	Ala	Lys	Gln
Met	Phe	Thr	Cys	Arg	Val	Ala	His	Thr	Pro	Ser	Ser	Thr	Asp	Trp	Val
Asp	Asn	Lys	Thr	Phe	Ser	Val	Cys	Ser	Arg	Asp	Phe	Thr	Pro	Pro	Thr
Val	Lys	Ile	Leu	Gln	Ser	Ser	Cys	Asp	Gly	Gly	Gly	His	Phe	Pro	Pro
Thr	Ile	Gln	Leu	Leu	Cys	Leu	Val	Ser	Gly	Tyr	Thr	Pro	Gly	Thr	Ile
Asn	Ile	Thr	Trp	Leu	Glu	Asp	Gly	Gln	Val	Met	Asp	Val	Asp	Leu	Ser
Thr	Ala	Ser	Thr	Thr	Gln	Glu	Gly	Glu	Leu	Ala	Ser	Thr	Gln	Ser	Glu
Leu	Thr	Leu	Ser	Gln	Lys	His	Thr	Leu	Ser	Asp	Arg	Thr	Tyr	Thr	Cys
Gln	Val	Thr	Tyr	Gln	Gly	His	Thr	Phe	Glu	Asp	Ser	Thr	Lys	Lys	Cys
Ala	Asp	Ser	Asn	Pro	Arg	Gly	Val	Ser	Ala	Tyr	Leu	Ser	Arg	Pro	Ser
Pro	Phe	Asp	Leu	Phe	Ile	Arg	Lys	Ser	Pro	Thr	Ile	Thr	Cys	Leu	Val
Val	Asp	Leu	Ala	Pro	Ser	Lys	Gly	Thr	Val	Asn	Leu	Thr	Trp	Ser	Arg
Ala	Ser	Gly	Lys	Pro	Val	Asn	His	Ser	Thr	Arg	Lys	Glu	Glu	Lys	Gln
Arg	Asn	Gly	Thr	Leu	Thr	Val	Thr	Ser	Thr	Leu	Pro	Val	Gly	Thr	Arg
Asp	Trp	Ile	Glu	Gly	Glu	Thr	Tyr	Gln	Cys	Arg	Val	Thr	His	Pro	His
Leu	Pro	Arg	Ala	Leu	Met	Arg	Ser	Thr	Thr	Lys	Thr	Ser	Gly	Pro	Arg
Ala	Ala	Pro	Glu	Val	Tyr	Ala	Phe	Ala	Thr	Pro	Glu	Trp	Pro	Gly	Ser
Arg	Asp	Lys	Arg	Thr	Leu	Ala	Cys	Leu	Ile	Gln	Asn	Phe	Met	Pro	Glu
Asp	Ile	Ser	Val	Gln	Trp	Leu	His	Asn	Glu	Val	Gln	Leu	Pro	Asp	Ala
Arg	His	Ser	Thr	Thr	Gln	Pro	Arg	Lys	Thr	Lys	Gly	Ser	Gly	Phe	Phe
Val	Phe	Ser	Arg	Leu	Glu	Val	Thr	Arg	Ala	Glu	Trp	Glu	Gln	Lys	Asp
Glu	Phe	Ile	Cys	Arg	Ala	Val	His	Glu	Ala	Ala	Ser	Pro	Ser	Gln	Thr
Val	Gln	Arg	Ala	Val	Ser	Val	Asn	Pro	Gly	Lys					

FIGURE 6

Phe	Thr	Pro	Pro	Thr	Val	Lys	Ile	Leu	Gln	Ser	Ser	Cys	Asp	Gly	Gly
Gly	His	Phe	Pro	Pro	Thr	Ile	Gln	Leu	Leu	Cys	Leu	Val	Ser	Gly	Tyr
Thr	Pro	Gly	Thr	Ile	Asn	Ile	Thr	Trp	Leu	Glu	Asp	Gly	Gln	Val	Met
Asp	Val	Asp	Leu	Ser	Thr	Ala	Ser	Thr	Thr	Gln	Glu	Gly	Glu	Leu	Ala
Ser	Thr	Gln	Ser	Glu	Leu	Thr	Leu	Ser	Gln	Lys	His	Trp	Leu	Ser	Asp
Arg	Thr	Tyr	Thr	Cys	Gln	Val	Thr	Tyr	Gln	Gly	His	Thr	Phe	Glu	Asp
Ser	Thr	Lys	Lys	Cys	Ala	Asp	Ser	Asn	Pro	Arg	Gly	Val	Ser	Ala	Tyr
Leu	Ser	Arg	Pro	Ser	Pro	Phe	Asp	Leu	Phe	Ile	Arg	Lys	Ser	Pro	Thr
Ile	Thr	Cys	Leu	Val	Val	Asp	Leu	Ala	Pro	Ser	Lys	Gly	Thr	Val	Asn
Leu	Thr	Trp	Ser	Arg	Ala	Ser	Gly	Lys	Pro	Val	Asn	His	Ser	Thr	Arg
Lys	Glu	Glu	Lys	Gln	Arg	Asn	Gly	Thr	Leu	Thr	Val	Thr	Ser	Thr	Leu
Pro	Val	Gly	Thr	Arg	Asp	Trp	Ile	Glu	Gly	Glu	Thr	Tyr	Gln	Cys	Arg
Val	Thr	His	Pro	His	Leu	Pro	Arg	Ala	Leu	Met	Arg	Ser	Thr	Thr	Lys
Thr	Ser	Gly	Pro	Arg	Ala	Ala	Pro	Glu	Val	Tyr	Ala	Phe	Ala	Thr	Pro
Glu	Trp	Pro	Gly	Ser	Arg	Asp	Lys	Arg	Thr	Leu	Ala	Cys	Leu	Ile	Gln
Asn	Phe	Met	Pro	Glu	Asp	Ile	Ser	Val	Gln	Trp	Leu	His	Asn	Glu	Val
Gln	Leu	Pro	Asp	Ala	Arg	His	Ser	Thr	Thr	Gln	Pro	Arg	Lys	Thr	Lys
Gly	Ser	Gly	Phe	Phe	Val	Phe	Ser	Arg	Leu	Glu	Val	Thr	Arg	Ala	Glu
Trp	Glu	Gln	Lys	Asp	Glu	Phe	Ile	Cys	Arg	Ala	Val	His	Glu	Ala	Ala
Ser	Pro	Ser	Gln	Thr	Val	Gln	Arg	Ala	Val	Ser	Val	Asn	Pro	Gly	Lys

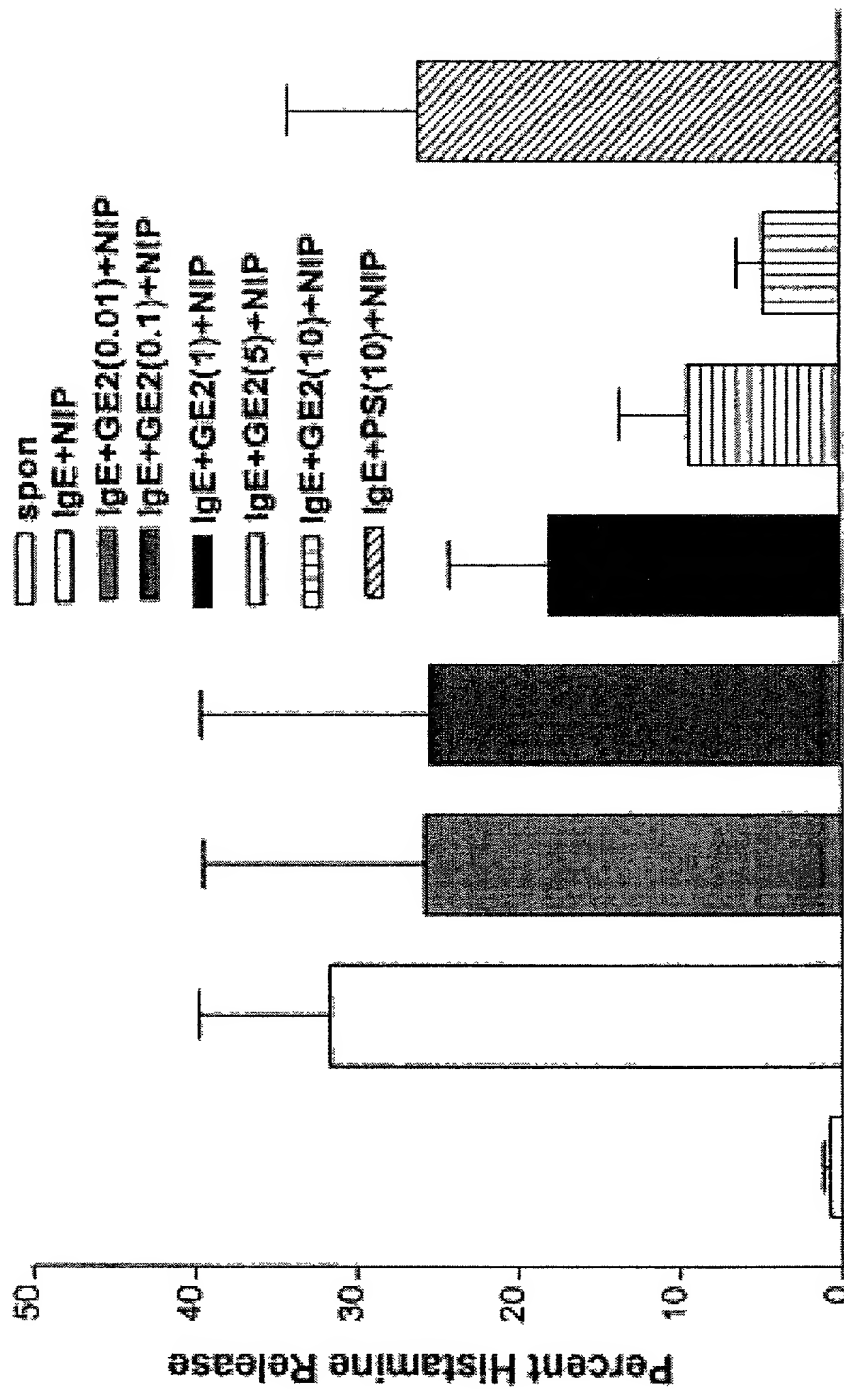
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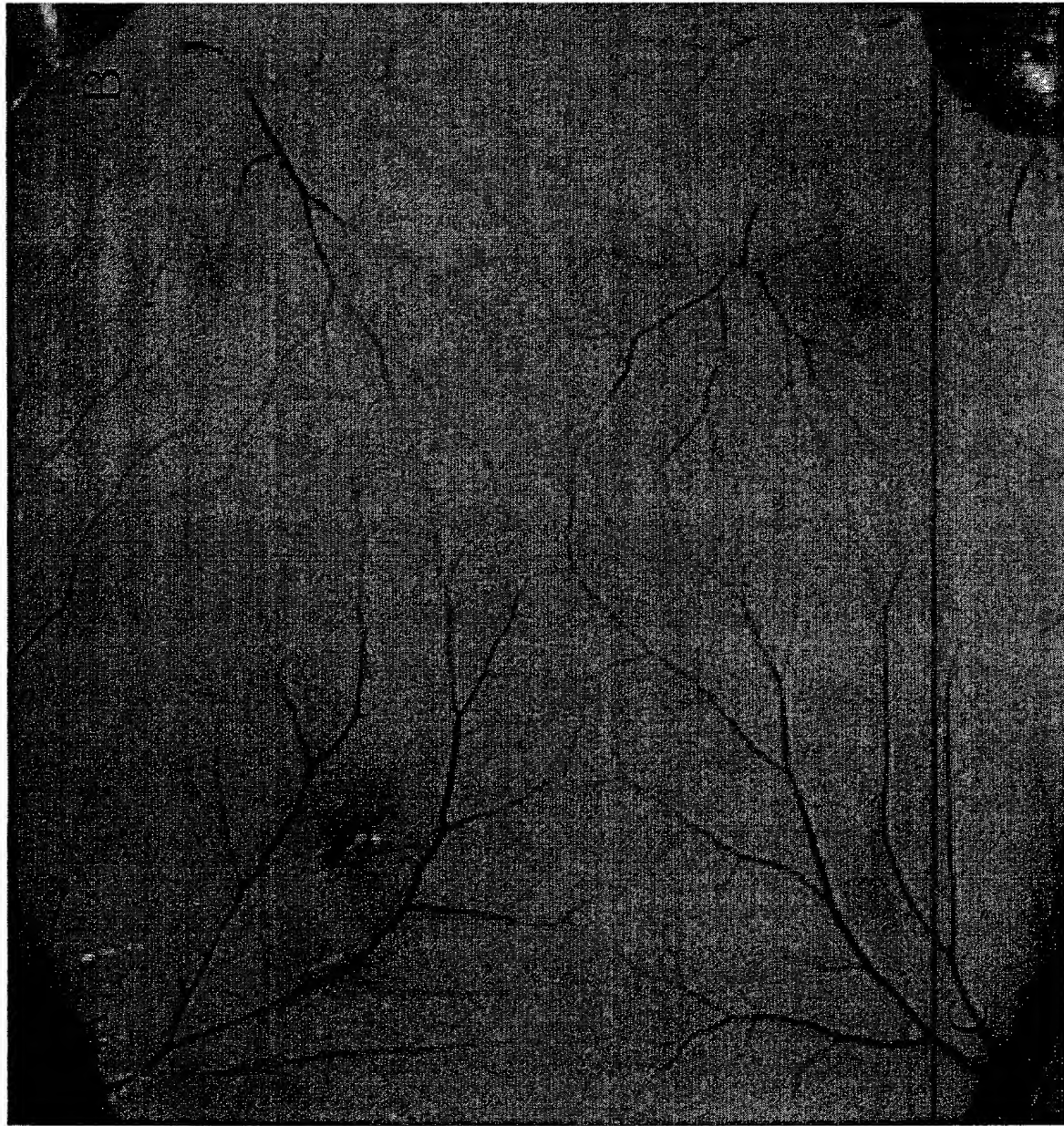
FIGURE 7

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
 Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
 Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
 Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
 Asp Gly Val Glu Val His Asn Val Lys Thr Lys Pro Arg Glu Glu Gln
 Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
 Asn Trp Met Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
 Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Val Gln Pro
 Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr
 Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
 Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
 Lys Thr Thr Pro Pro Val Leu Asp Ser Val Gly Ser Phe Phe Leu Tyr
 Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
 Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Gln Gln Arg
 Ser Leu Ser Leu Ser Pro Gly Lys Val Glu Gly Gly Gly Gly Ser Gly
 Gly Gly Gly Ser Gly Gly Gly Gly Ser Phe Thr Pro Pro Thr Val Lys
 Ile Leu Gln Ser Ser Cys Asp Gly Gly Gly His Phe Pro Pro Thr Ile
 Gln Leu Leu Cys Leu Val Ser Gly Tyr Thr Pro Gly Thr Ile Asn Ile
 Thr Trp Leu Glu Asp Gly Gln Val Met Asp Val Asp Leu Ser Thr Ala
 Ser Thr Thr Gln Glu Gly Glu Leu Ala Ser Thr Gln Ser Glu Leu Thr
 Leu Ser Gln Lys His Trp Leu Ser Asp Arg Thr Tyr Thr Cys Gln Val
 Thr Tyr Gln Gly His Thr Phe Glu Asp Ser Thr Lys Lys Cys Ala Asp
 Ser Asn Pro Arg Gly Val Ser Ala Tyr Leu Ser Arg Pro Ser Pro Phe
 Asp Leu Phe Ile Arg Lys Ser Pro Thr Ile Thr Cys Leu Val Val Asp
 Leu Ala Pro Ser Lys Gly Thr Val Asn Leu Thr Trp Ser Arg Ala Ser
 Gly Lys Pro Val Asn His Ser Thr Arg Lys Glu Glu Lys Gln Arg Asn
 Gly Thr Leu Thr Val Thr Ser Thr Leu Pro Val Gly Thr Arg Asp Trp
 Ile Glu Gly Glu Thr Tyr Gln Cys Arg Val Thr His Pro His Leu Pro
 Arg Ala Leu Met Arg Ser Thr Thr Lys Thr Ser Gly Pro Arg Ala Ala
 Pro Glu Val Tyr Ala Phe Ala Thr Pro Glu Trp Pro Gly Ser Arg Asp
 Lys Arg Thr Leu Ala Cys Leu Ile Gln Asn Phe Met Pro Glu Asp Ile
 Ser Val Gln Trp Leu His Asn Glu Val Gln Leu Pro Asp Ala Arg His
 Ser Thr Thr Gln Pro Arg Lys Thr Lys Gly Ser Gly Phe Phe Val Phe
 Ser Arg Leu Glu Val Thr Arg Ala Glu Trp Glu Gln Lys Asp Glu Phe
 Ile Cys Arg Ala Val His Glu Ala Ala Ser Pro Ser Gln Thr Val Gln
 Arg Ala Val Ser Val Asn Pro Gly Lys

FIGURE 8

Dose-dependent inhibition of basophil histamine release using the fusion protein GE2 (\pm SEM; n=3 separate donors, each in duplicate)



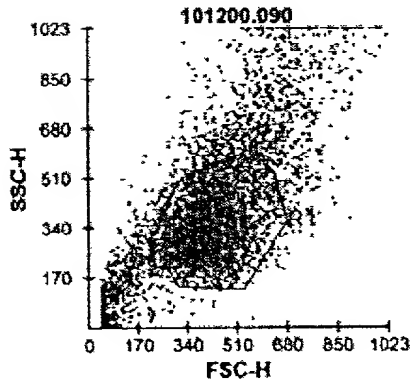


A: 250ng human IgE-anti NP B: saline
C: 250ng human IgE-anti NP+250ng GE2 D: 250ng human IgE-anti NP+250ng PS IgE

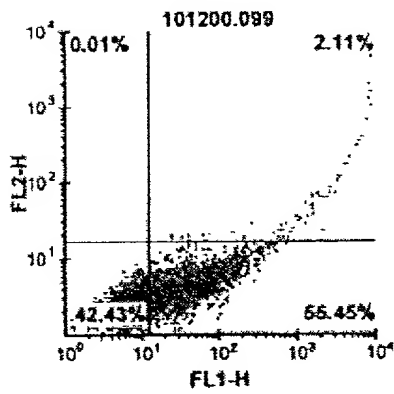
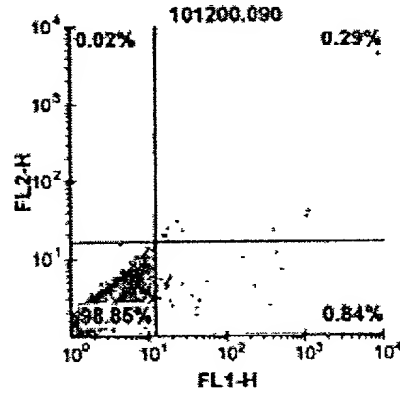
FIGURE 10

GE2 binding to HMC-1 cells that express
FcGR1b but not FcER1a

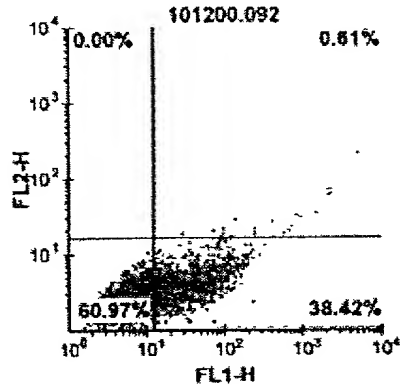
A. Cell gating



B. Control staining with
goat anti-human IgG



C. human IgG followed
by staining with goat anti-
human IgG

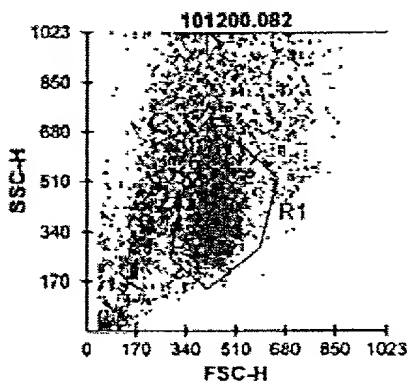


C. GE2 protein followed
by staining with goat anti-
human IgG

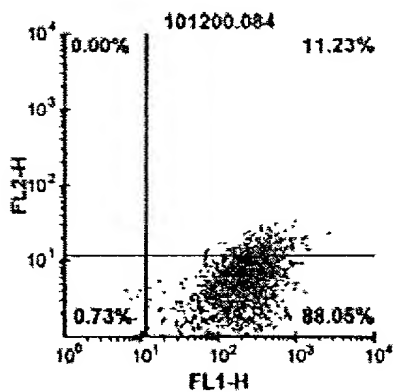
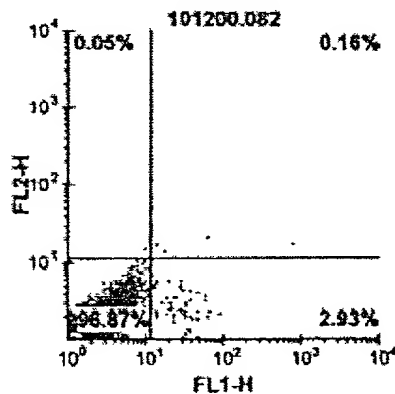
FIGURE 11

GE2 binding to 3D10 cells that express FcεRIa but not FcγRIIb

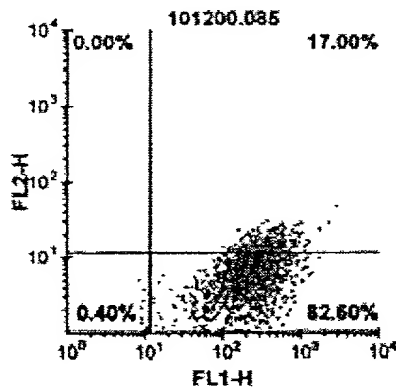
A. Cell gating on 3D10 cells which express FcεRIa but not EcGR-



B. Staining with goat anti-human IgE alone



C. human IgE myeloma followed by staining with goat anti-human IgE



D. GE2 followed by staining with goat anti-human IgE